

Very young larva light greyish to yellowish, elliptical in outline, very flat; margin of body but slightly crenulated, but with a fringe of thirty-four large hairs or setæ. Antennæ and legs well developed, the latter with one long claw. Vasiform orifice large, broadly subovate in outline. Operculum elliptical, short, much wider than long. Lingula extending to the posterior edge of orifice, subspatulate, with the posterior half serrated and setose, terminating in a pair of long setæ.

Pupa light yellow in colour, of same size and shape as full-grown larva. Eyes very large, dark chestnut-brown. Marginal setæ and vasiform orifice as in full-grown larva.

Adult female light yellow in colour; wings creamy white, becoming colourless in balsam, covered with a fine white powder. Fore wings with a small dark spot at the distal end of the vein, which under the microscope shows that it is composed of a number of minute polygonal cells or areas. Eyes large, oval, but slightly constricted in the middle, dark chestnut-brown in colour. Antennæ of seven joints. Length .475 to .500 millim. Approximate length of joints in $\mu\mu$: (1) 21, (2) 70, (3) 147-175, (4) 56, (5) 70, (6) 59, (7) 53. The length of the joints varies in different individuals, but the relative proportions are preserved, these showing that joint 1 is very short, joint 3 very long, and joints 2, 4-7 are subequal. Legs very long. Length of insect .750-.940 millim.; extent of wings 3.150 millim.

Adult male: colour, antennæ, wings, and legs as in the female. Genitalia large, with a strong upward curve. Length .940 millim.; extent of wings 2.530 millim.

Hab. Iguape and Campinas, State of S. Paulo, Brazil; on cabbage and collards, usually preferring the underside of the leaves, but sometimes found scattered on the upper surface also.

The adults fly readily when disturbed. The damage done to the plants attacked is considerable, as the leaves become yellow, wilted, and covered with a white powder, being thus rendered unfit for use. This species is dedicated to Mr. Ernesto Young, of Iguape, who first sent specimens, and furnished the following notes on the life-history of the insect:—"The female lays about thirty-five eggs, sometimes in a semicircle, but frequently also in irregular clusters or singly, taking from thirty-five to thirty-six hours for the entire operation. The larvæ hatch from the eggs in sixty-eight to eighty-two hours, and in about five days become full-grown. The pupa stage lasts but a few days; so that, under favourable circumstances, the life-cycle is accomplished in from twelve to fifteen days."

Aleurodes struthanthi, sp. n.

Pupa broadly ovate or subcircular, slightly pointed, and narrower anteriorly than posteriorly, flat, hard, black or a mixture of black and yellowish. Dorsum bare, and no lateral fringe of wax present. Lateral margin of body not crenulated. In all specimens there is a narrow black marginal border. The rest of the dorsum is black except a \wedge -shaped yellowish patch near the anterior margin, with a small yellowish spot behind it on each side, and a semilunar space near the posterior margin of the same colour. In many specimens the dorsum shows a reticulated appearance as well as many fine radiating lines, especially near the margin. Surface or margin without hairs or setæ. Vasiform orifice about .400 millim. from the posterior margin of body, small, hemispherical. Operculum hemispherical, completely closing the orifice. Lingula small, subspatulate, with two lobes on each side and one terminal lobe. At the base of the orifice there is a pair of crescent-shaped thickenings. The scale is perforated at three places, posteriorly at the anal orifice and laterally at the first stigmatal areas. These perforations are very small and close to the margin. Length 2.20 millim.; width 1.90 millim.

Adult female unknown.

Adult male yellowish brown in colour; eyes large, black, dumbbell-shaped, nearly separated in the middle. Wings of a uniform smoky colour. Length of body 1.60 millim.; extent of wings 3.60 millim. The basal branch of the vein in the fore wing is but slightly developed. Legs long and hairy. Antennæ of seven joints, .805-.870 millim. long. Length of joints in $\mu\mu$: (1) 35, (2) 63-70, (3) 84-122, (4) 14, (5) 14-21, (6) 252-273, (7) 315-350. Genitalia well developed, forcipate; valves strongly curved at tip and furnished with a few hairs. Penis about $\frac{3}{4}$ length of valves, bent upward with a slight gradual curve.

Hab. Paruahyba and S. Paulo. On *Struthanthus flexicaulis*, Mart., growing on orange, *Mechilia flava*, and an unidentified forest tree.

Genus ALEURODICUS, Douglas.

Aleurodicus Cockerellii, Quaintance.

Grown larva and pupa yellowish, about 1.87 millim. long and 1.33 millim. wide; very flat; lateral edge thin. Dorsum covered with a dense thick mass of white secretion, arranged in a marginal fringe, and a submarginal oval ring.

Adult male light yellow in colour; head, eyes, wings, and antennæ as in the female. Body narrow, 2.21 millim. long. Extent of wings 4.93 millim. Genitalia large, .430 millim. long, forcipate, tips strongly curved. Penis fine, tip curved upward, .190 millim. long.

Eggs small, elongate, slightly curved, light yellowish, with a short peduncle; usually laid in an irregular mass and covered with a fine white powder. The eggs hatch in from 11 to 13 days. The larva stage lasts from 44-46 days, and the pupa stage from 15-16 days.

Hab. Campinas, State of S. Paulo, on the underside of leaves of a cultivated guava (*Psidium cattleianum*). The entire under surface of the leaves becomes coated with a fine white powder, while the upper surface is usually covered with a black fungus.

Coccidæ.

Genus DACTYLOPIUS, Costa.

Dactylopius subterraneus, sp. n.

Female, gall-producing, on roots of cultivated grapes. Galls irregularly globose, 3-5 millim. in diameter, forming a mass encircling the entire root. The interior is smooth and lined with a white powder.

Female, probably immature, oval-convex, length of prepared specimen 2.52 millim.; width 1.50 millim. Antennæ of eight joints, all bearing hairs; joint 8 the longest. Length of antenna about .380 millim. Length of joints in μ : (1) 56, (2) 42, (3) 56, (4) 31, (5) 31, (6) 35-38, (7) 38, (8) 84-91. Approximate formula: 8 (13) 2 (76) 45. Two small conical eyes present. Rostrum large, situated between the first pair of legs. Rostral loop extending halfway between the second and third pair of legs. Legs long. Length of joints of first pair of legs in μ : coxa 91, femur and trochanter 245, tibia 140, tarsus and claw 91. Claw small, well curved; both pair of digitules small, with slightly expanded ends. Anal ring with six hairs. Anal tubercles inconspicuous, each ending in one seta. On the dorso-lateral surface of the body, including the anal tubercles, there is a series of 34 groups of spines; each group consisting of two thick sharp spines, with tuberculate bases, around which are clustered 6-8 round glands. The abdominal segments are distinct. The last 4-5 segments bear on the ventral surface many large round glands, while the dorsal derm bears many small tubular glands.

Hab. La Plata, Argentine Republic, on the roots of

cultivated grapes. Found by Dr. Carlos Spegazzini, and sent to the writer by Dr. H. v. Ihering of S. Paulo.

Genus CEROPLASTES, Gray.

Ceroplastes campinensis, sp. n.

Adult female scale light yellow in colour, irregular, oval in outline. Dorsum irregular, usually with three rounded humps, one anterior and two posterior. Dorsal nucleus alone present, depressed, slightly darker in colour than the surrounding wax. The individuals vary considerably, the very young specimens showing the three humps distinctly; while in the older specimens the dorsum becomes more convex and the humps are less conspicuous. There are also specimens that are very irregular and have the dorsum ornamented by a larger number of humps. Not divided into distinct plates. Length about 4 millim.; width 3 millim.; height 2.50 millim. Very old specimens are frequently larger. The widest part is posterior of the middle. On each side, at the stigmatal areas, there are two filaments of white wax that grow out at right angles to the body, often attaining a length of 1.25 millim.

Boiled in a solution of KOH, it colours the liquid carmine. Freed from wax, the adult female is convex, derm light brown; caudal horn very short, dark brown in colour. There are no distinct tubercles present, but the dorsum is slightly lobed, being wider posteriorly than anteriorly. Around the ventral margin there is a narrow flange, which is slightly indented at the stigmatal areas. Derm chitinous, semi-transparent. Length 3.25 millim.; width 2.50 millim.; height 2.25 millim. Antennæ small and thin, of six joints, all of which bear hairs. Length .241-.252 millim. Length of joints in μ : (1) 42, (2) 35-42, (3) 84-98, (4) 17-21, (5) 21-24, (6) 28-35. Approximate formula: 3 (1 2 6) (54). Rostrum well developed. Rostral loop short. Legs weak. Length of joints of first pair of legs in μ : coxa 77, trochanter and femur 126, tibia 77, tarsus and claw 23. Claw small. Tarsal digitules fine, with slightly expanded ends; those of the claw larger, of unequal size, one being very large, with ends widely expanded. Lateral margin notched at the spiracles; each notch with a circular area of 75-85 large and small blunt spines. Dorsal surface studded with fine gland-hairs.

Male scales very light yellow, elliptical; dorsum convex, ends rounded; lateral margin with a slight fringe of bits of wax. Length 1.25 millim.; width .75 millim. Usually placed on the undersides of the leaves.

Hab. Botucatu and Campinas, State of S. Paulo. On a forest tree belonging to the family Myrtaceæ, and on cultivated guava (*Psidium* sp.). The female scales are found on the twigs, and on the midribs on the underside of the leaves, while the male scales are found scattered over the entire under surface of the leaves. The leaves and the scales themselves are usually thickly covered with a black fungus, so that it is nearly impossible to find well-preserved old specimens. A species of ant also accompanies this insect.

Ceroplastes bicolor, sp. n.

Adult female scale subcircular; general colour light greenish yellow, sides light reddish brown. Wax hard, surface roughened, the divisions into plates indicated by fine lines. Dorsum flat, greatly depressed about the dorsal nucleus, giving the scale a crater-like appearance. Lateral abdominal margins contracted, light reddish brown in colour, with two fine white lines on each side. Dorsal nucleus large, sub-quadrangle, light orange in colour. The posterior edge of the scale is slightly notched. Size about 4 millim. in diameter. The individuals vary—sometimes the transverse diameter being the greater, sometimes the longitudinal diameter. Height 2-2.25 millim.

Boiled in a solution of KOH, it gives to the liquid the colour of port wine. Denuded of wax, light brown in colour; caudal horn very short, black. Derm neither hard nor thick. Outline slightly angular, dorsum convex, with no distinct humps; lateral margins slightly notched at the stigmatal areas. Length 3 millim.; height 2 millim.; width 2.5 millim. Antennæ small, of six joints, all of which bear hairs. Length .210-.219 millim. Length of joints in μ : (1) 28, (2) 33-36, (3) 61-83, (4) 19-22, (5) 22-25, (6) 31-33. Approximate formula: 3 2 6 1 (5 4). Rostrum well developed. Rostral loop extending to the second pair of legs. Legs very small and weak. Length of joints of first pair of legs in μ : coxa 63, femur and trochanter 84, tibia 77, tarsus and claw 63. Digitules of tarsus long, with ends expanded; those of the claw larger, of unequal size, with ends expanded. Lateral margin slightly notched at the spiracles; each notch bears a circular area of about 90 large and small blunt spines.

Male scales small, reddish brown in colour, elliptical with the ends rounded, and the dorsum convex. Length 1.25 millim.; width .60 millim.

Adult male small, dark brown in colour; antennæ and legs yellowish brown. Total length, including genital spike, .825 millim.; genital spike .175 millim. Extent of wings